CENTER FOR BEAM PHYSICS SEMINAR

"Coherent Synchrotron Radiation in a Storage Ring"

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Friday May 2, 2003, 10:30 AM
Albert Ghiorso Conference Room (71-264), LBNL

••• Refreshments served at 10:20 AM •••

Abstract: I will present a model for producing stable broadband coherent synchrotron radiation (CSR) in the terahertz frequency region in an electron storage ring. The model includes distortion of bunch shape due to CSR, leading to an enhancement of higher frequency coherent emission, and limiting stable emission due to a microbunching instability excited by the CSR. We use this model to quantitatively explain several features of the recent observations of CSR at the BESSY-II storage ring. We also use this model to optimize the performance of a source for CSR emission.

Biographical data and research interests: I received my Ph.D. in accelerator physics from Cornell University in 1992. I joined the Center for Beam Physics at Lawrence Berkeley National Laboratory in December 1991 where I worked on multibunch feedback systems for the Advanced Light Source and PEP-II. I moved to the ALS accelerator physics group in 1996. I just received my PADI certification for scuba diving.